CIVIL-TECH CONSULTANTS AND ENGINEERS

Building & Highway Material Testing Laboratory

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Job No.: CTCE/BBMP/W.No.12/KRIDL/GSB-1/GR/2013-14 Date : 05.08.2013

GRADATION FOR GSB-I (CLOSE GRADED)
IS: 2720 (Part 4)

Client : **Asst. Executive Engineer,** Shettyhalli Sub Division, BBMP, Bangalore.

Agency : **Technical Manager (West),** KRIDL, Bangalore.

Name of work : Asphalting from Pipeline road junction to Abbigere village Abbigere main road in Ward No.12, Shettyhalli Sub Division, BBMP, Bangalore.

Reference : EE/DD/WO/122/2011-12 Dated: 10.02.2012

Date of Testing : 05.08.2013

Sample Source : GSB Mix Plant Bangalore. **Oven Dry Wt (gm) :** 8140

Is Sieve Size in mm	Weight Retained (gm)	Cumulative Weight Retained (gm)	Cumulative % of Retained	Cumulative % of Passing	Specified Limits
75.0	0	0	0.00	100	100
53.0	180	180	2.21	97.79	80-100
26.50	2415	2595	31.88	68.12	55-90
9.50	1215	3810	46.81	53.19	35-65
4.75	1080	4890	60.07	39.93	25-55
2.36	990	5880	72.24	27.76	20-40
0.425	910	6790	83.42	16.58	10-25
0.075	850	7640	93.86	6.14	3-10
PAN	500				
Total	8140				

Remarks: Satisfies MORTH Specifications as per Table 400-1, Grading I

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Job No.: CTCE/BBMP/W.No.12/KRIDL/GSB-1/AL/2015-16 Date : 05.08.2013

ATTERBERG LIMITS TEST FOR GSB (CLOSE GRADED)

IS : 2720 (Part - 5)

Client : **Asst. Executive Engineer,** Shettyhalli Sub Division, BBMP, Bangalore.

Agency : **Technical Manager (West),** KRIDL, Bangalore.

Name of work : Asphalting from Pipeline road junction to Abbigere village Abbigere main road in Ward No.12, Shettyhalli Sub Division, BBMP, Bangalore.

Reference : EE/DD/WO/122/2011-12 Dated: 10.02.2012

Date of Testing : 05.08.2013

As per MORTH Table : 400-11

Sl. No.	Particulars	Test Results	Standards as per Specifications
1	Liquid Limit, %	23.00	25.0% Maximum.
2	Plasticity Index, %	Non Plastic	6.0% Maximum.

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Job No.: CTCE/BBMP/W.No.12/KRIDL/WMM/Gradation/2013-14

08.08.2013

GRADATION FOR WMM
MORTH TABLE-400-11

Client : **Asst. Executive Engineer,** Shettyhalli Sub Division, BBMP, Bangalore.

Agency : **Technical Manager (West),** KRIDL, Bangalore.

Name of Work : Asphalting from Pipeline road junction to Abbigere village Abbigere main road in Ward No.12, Shettyhalli Sub Division, BBMP, Bangalore.

Reference : EE/DD/WO/122/2011-12 Dated: 10.02.2012

Date of Testing : 08.08.2013

Material : WMM

Sample Location : WMM Mix Plant

Oven Dry Wt (gm): **7815**

Is Sieve Size in mm	Weight Retained (gm)	Cumulative Weight Retained (gm)	Cumulative % of Retained	Cumulative % of Passing	Spec.Limits
53	0	0	0	100	100
45	250	250	3.2	96.8	95-100
22.4	2515	2765	35.4	64.6	60-80
11.2	1290	4055	51.9	48.1	40-60
4.75	1015	5070	64.9	35.1	25-40
2.36	990	6060	77.5	22.5	15-30
0.600	720	6780	86.8	13.2	8-22
0.075	585	7365	94.2	5.8	0-8

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Job No.: CTCE/BBMP/W.No.12/KRIDL/WMM/Gradation/2013-14 08.08.2013

GRADATION FOR WMM
MORTH TABLE-400-11

Client : **Asst. Executive Engineer,** Shettyhalli Sub Division, BBMP, Bangalore.

Agency : **Technical Manager (West),** KRIDL, Bangalore.

Name of Work : Asphalting from Pipeline road junction to Abbigere village Abbigere main road in Ward No.12, Shettyhalli Sub Division, BBMP, Bangalore.

Reference : EE/DD/WO/122/2011-12 Dated: 10.02.2012

Date of Testing : 08.08.2013

Material : WMM

Sample Location : WMM Mix Plant Oven Dry Wt (gm): **7650**

Is Sieve Size in mm	Weight Retained (gm)	Cumulative Weight Retained (gm)	Cumulative % of Retained	Cumulative % of Passing	Spec.Limits
53	0	0	0	100	100
45	230	230	3.0	97.0	95-100
22.4	2650	2880	37.6	62.4	60-80
11.2	1210	4090	53.5	46.5	40-60
4.75	1000	5090	66.5	33.5	25-40
2.36	980	6070	79.3	20.7	15-30
0.600	780	6850	89.5	10.5	8-22
0.075	600	7450	97.4	2.6	0-8

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Job No.: CTCE/BBMP/W.No.12/KRIDL/WMM/AIV/2013-14 08.08.2013

Aggregate Impact Value

IS: 2386 Part IV

Client	**Asst. Executive Engineer,** Shettyhalli Sub Division, BBMP, Bangalore.
Agency	**Technical Manager (West),** KRIDL, Bangalore.
Name of the Work	Asphalting from Pipeline road junction to Abbigere village Abbigere main road in Ward No.12, Shettyhalli Sub Division, BBMP, Bangalore.
Reference	EE/DD/WO/122/2011-12 Dated: 10.02.2012
Source / Location	WMM Plant
Type of Mix	Wet Mix macadam
Date of Testing	08.08.2013

Sl No.	Details	Trial No.		Average
		1	2	
1	Total weight of aggregate sample filling the cylindrical measure = W_1 g	379	380	
2	Weight of agregate passing 2.36 mm sieve after the test = W_2 g	78	79	
3	Weight of aggregate retained 2.36 mm sieve after the test = W_3 g	301	301	
4	Aggregate Impact value = percent fines	20.58	20.79	
	100* (W_2/W_1)%			20.68

Comments:

→ Maximum allowable Aggregate Impact value for Wet mix Macadam is 30%

Note:

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Ravi. N.K.

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DETERMINATION OF FLAKINESS INDEX & ELONGATION INDEX OF COARSE AGGREGATES

Client	**Asst. Executive Engineer,** Shettyhalli Sub Division, BBMP, Bangalore.
Agency	**Technical Manager (West),** KRIDL, Bangalore.
Name of Work	Asphalting from Pipeline road junction to Abbigere village Abbigere main road in Ward No.12, Shettyhalli Sub Division, BBMP, Bangalore.
Reference	EE/DD/WO/122/2011-12 Dated: 10.02.2012
Technical Reference	IS 2386(Part 1) 1963 (RA 2011)
Type of Mix	Wet Mix Macadam
Date of Testing	08.08.2013

Result : Flakiness Index = **11.06%**

Elongation Index = **13.25%**

Result : Combined Flakiness & Elongation index **24.31%**

Comments:

Maximum allowable Flakiness & Elongation Index for Wet Mix Macadam is 30%

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Job No.: CTCE/BBMP/W.No.12/KRIDL/BM(QB)/2013-14 19.08.2013

TEST REPORT ON DETERMINATION OF BITUMEN CHARACTERISTICS

CLIENT	:	**Asst. Executive Engineer,** Shettyhalli Sub Division, BBMP, Bangalore.
AGENCY	:	**Technical Manager (West),** KRIDL, Bangalore.
NAME OF THE WORK	:	Asphalting from Pipeline road junction to Abbigere village Abbigere main road in Ward No.12, Shettyhalli Sub Division, BBMP, Bangalore.
REFERENCE	:	EE/DD/WO/122/2011-12 Dated: 10.02.2012
SOURCE OF LOCATION	:	Hot mix Plant, Bangalore
DATE OF TESTING	:	19.08.2013

The results of the tests conducted on the bitumen sample.

Sl. No	Description	Test Method as per IS	Test Result	Requirement as per IS:73:2013
1	Penetration at 25 ^{0}C, 1/10 mm	IS :1203 -1978 (RA-2009)	82	80 to 100
2	Softening point, ^{0}C	IS :1205 -1978 (RA-2009)	46	Min. 40
3	Ductility at 27^{0}C, cm	IS :1208 -1978 (RA-2009)	100 >	Min. 75
4	Flash Point, ^{0}C	IS :1209 -1978 (RA-2009)	302	Min. 220

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